RUST GEOTECH INC.

Spectral Gamma-Ray Borehole
Log Data Report

Borehole 41-11-05

Log Event A

Borehole Information

Farm : SX	**Tank :** SX-111	**Site Number :** 299-W23-92
N-Coord : 35,209	**W-Coord :** 75,736	**TOC Elevation :** 662.60
Water Level, ft :	**Date Drilled :** 3/8/1962	

Casing Record

Type : Steel-welded	**Thickness :** 0.280	**ID, in. :** 6
Top Depth, ft. : 0	**Bottom Depth, ft. :** 135	

Equipment Information

Logging System : 2	**Detector Type :** HPGe	**Detector Efficiency:** 35.0 %
Calibration Date : 03/1995	**Calibration Reference :** GJPO-HAN-1	

Logging Information

Log Run Number : 1	**Log Run Date :** 6/20/1995	**Logging Engineer:** Dave Traub
Start Depth, ft.: 0.0	**Counting Time, sec.:** 100	**L/R :** L **Shield :** N
Finish Depth, ft. : 33.0	**MSA Interval, ft. :** 0.5	**Log Speed, ft/min.:** n/a

Log Run Number : 2	**Log Run Date :** 6/21/1995	**Logging Engineer:** Dave Traub
Start Depth, ft.: 135.0	**Counting Time, sec.:** 100	**L/R :** L **Shield :** N
Finish Depth, ft. : 41.5	**MSA Interval, ft. :** 0.5	**Log Speed, ft/min.:** n/a

Log Run Number : 3	**Log Run Date :** 6/22/1995	**Logging Engineer:** Dave Traub
Start Depth, ft.: 31.0	**Counting Time, sec.:** 100	**L/R :** L **Shield :** N
Finish Depth, ft. : 42.5	**MSA Interval, ft. :** 0.5	**Log Speed, ft/min.:** n/a

Borehole 41-11-05

Log Event A

Analysis Information

Analyst : D.C. Stromswold

Data Processing Reference : Data Analysis Manual Ver. 1 Analysis Date : 11/10/1995

Analysis Notes :

Borehole 41-11-05 was logged in three runs in a move-stop-acquire mode that collected spectra for 100 seconds every 0.5 ft. Gain drifts during the second run necessitated five different energy calibrations during data processing to maintain proper radionuclide identification, whereas runs 1 and 2 were analyzed using only one energy calibration for each run.

Verification spectra collected before and after each run showed that the tool was operating correctly. The verification spectrum obtained before the second run had slightly poorer energy resolution than normal, perhaps caused by detector or electronics temperature changes that morning. This did not affect the ability to identify the radionuclides.

Correction factors for 0.25-in.-thick steel casing were used during data processing.

Cs-137 was the only man-made radionuclide identified in this borehole. It occurred from the surface to about 5 ft, with isolated occurrences near the minimum detection limit down to about 20 ft. The detected concentrations (near the surface) were less than 40pCi/g.

The K, U, and Th logs indicated lithology changes over the interval from 58 to 76 ft.

Repeatability of results at the run overlap depths was within the statistical uncertainties of the calculated concentrations.

For additional log data interpretation, see the discussion for this borehole included in the Tank Summary Data Report for SX-111 .

Log Plot Notes:

Three log plots are provided. The first one shows Cs-137 concentrations. The second one shows the naturally occurring radionuclides (K-40, U-238, and Th-232), which can be used for lithology interpretations. A combination plot includes logs of Cs-137, natural gamma, total gamma derived from the spectral data, and the latest available data from WHC Tank Farms gross gamma logging. The headings of the Cs-137 and natural gamma plots identify the specific gamma rays used to calculate the concentrations.

Uncertainty bars on the plots show the statistical uncertainties for the measurements as 95-percent confidence intervals. Open circles on the plots give the minimum detectable activity (MDA). The MDA of a radionuclide represents the lowest concentraton at which positive identification of a gamma-ray peak is statistically defensible. If the reported concentration is slightly above the MDA, the 95-percent confidence interval may extend below the MDA value and detection is not assured with 95-percent certainty.

The Tank Farms gross gamma plot is the latest available from WHC. No attempt has been made to adjust the plot for depth discrepancies.